



First record of the genus *Zeuxevania* Kieffer, 1902 from Oriental Region (Hymenoptera: Evaniidae)

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A new species of *Zeuxevania* Kieffer, 1902 is described and illustrated from Yunnan, China: *Zeuxevania orientalis* Li & Xu, **sp. nov.**. A key to the species of *Zeuxevania* is provided.

Zeuxevania Kieffer, 1902 is a small and rare genus of Evaniidae (Hymenoptera), with eight valid described species reported in Afrotropical and Palearctic regions (Deans 2005; Deans *et al.* 2016). The genus of *Zeuxevania* is characterized by the following characters: antenna 13-segmented; head often appearing globular in lateral view; fore wing with six closed cells, vein 1RS missing, fusing basal and 1st submarginal cells; both 1cu-a and 2cu-a present; distance between mid and hind coxae $0.6 \times$ or less distance between fore and mid coxae; hind tibia and tarsus without prominent spines. Prior to this paper no species of *Zeuxevania* had been recorded from the Oriental region or China. Here one new species is discovered and described from China, Yunnan, representing the first record of the genus from the Oriental region.

Material and methods

Specimens were examined under a Motic SMZ-168 stereomicroscope. All photographs were taken with a digital camera Cool SNAP attached to the Zeiss Stemi 2000-CS stereomicroscope and processed by using Image-Pro Plus software. Figures were finished with Photoshop CC 2015.0.0, mostly to adjust the size and background.

Terminology of wing venation follows Deans & Huben (2003), other morphological terms mainly follow the Hymenoptera Anatomy Ontology Portal (HAO Portal) (Yoder *et al.* 2010) and Kawada (2011). Measurements in descriptions are relative, except for body length and fore wing length reported in millimeters.

Abbreviations used in the text are: **POL**= the shortest distance between posterior ocelli; **OOL**= the shortest distance between posterior ocellus and compound eye; **OD**=the diameter of ocellus.

The holotype of new species is deposited in the Hymenoptera collection of South China Agricultural University, Guangzhou (SCAU).

Genus *Zeuxevania* Kieffer, 1902

Zeuxevania Kieffer, 1902: 4.

Zeuxevania Kieffer: Kieffer 1911: 155; Kieffer 1912: 54; Benoit 1949: 274; 1952: 166; Deans & Huben 2003: 863; Deans 2005: 107.

Type species: *Evania dinarica* Schletterer, 1886, by monotypy.

Biology. Egg parasitoids of *Apotroga*, *Blattella*, and *Loboptera* (Blattodea) (Deans 2005).

Species included. Eight species. *Zeuxevania africana* Kieffer, 1911, *Z. globiceps* Enderlein, 1903, *Z. lamellata* Benoit, 1952, *Z. longicornis* Kieffer, 1910, *Z. mangbetuana* Benoit, 1949, *Z. splendidula* (Costa, 1884), *Z. tenuistilus* Enderlein, 1903, and *Z. variabilis* Benoit, 1952.

Distribution. Oriental region: China (new record); Afrotropical region: Congo, Madagascar, Mozambique, and Tanzania; Palearctic region: Croatia, Egypt, France, Greece, Italy, and Tunisia (Costa 1884; Enderlein 1903; Kieffer 1910, 1911, 1912; Benoit 1949, 1952; Deans 2005; Deans *et al.* 2016).

Key to species of genus *Zeuxevania*

- 1 Prothorax, mesoscutum, mesoscutellum and metanotum reddish-orange; mesoscutellum smooth; pronotum visible medially and form lamelliform anteriorly in dorsal view *Z. lamellata* Benoit
- Prothorax, mesoscutum, mesoscutellum and metanotum red, reddish-brown to black; mesoscutellum finely punctate; pronotum not visible medially in dorsal view 2
- 2 Head mostly black, with face and lower part of gena yellowish-brown to brown *Z. orientalis* Li & Xu, **sp. nov.**
- Head fully blackish-brown to black 3
- 3 Fore wing membrane hyaline, with apex fuscous *Z. mangbetuana* Benoit
- Fore wing membrane wholly hyaline 4
- 4 Lateral margin of mesoscutum straight medially; petiole laterally $2.5 \times$ as long as propodeum dorsally *Z. variabilis* Benoit
- Lateral margin of mesoscutum bent medially; petiole laterally less than $2.3 \times$ as long as propodeum dorsally 5
- 5 Hind tibia and first tarsomere with small spines *Z. longicornis* Kieffer
- Hind tibia and first tarsomere without small spines 6
- 6 Median lobe of mesoscutum triangular; notauli convergent posteriorly 7
- Median lobe of mesoscutum trapezoidal; notauli not convergent posteriorly 8
- 7 Petiole distinctly bent, laterally about $2.2 \times$ as long as propodeum dorsally *Z. tenuistilus* Enderlein
- Petiole straight or slightly bent, laterally about $1.5 \times$ as long as propodeum dorsally *Z. globiceps* Enderlein
- 8 Fore wing with vein 3M and 3CU and reaching outer margin; hind wing with seven hamuli; metasternal processes divergent *Z. africana* Kieffer
- Fore wing without vein 3M and 3CU; hind wing with five to six hamuli; metasternal processes parallel ... *Z. splendidula* (Costa)

Zeuxevania orientalis Li & Xu, **sp. nov.** (Figs 1–10)

Material examined. Holotype: ♂, CHINA: Yunnan Province, Tengchong County, Houqiao Town, 1.VI.2009, Geng-yun Niu (SCAU). Paratype: 1 ♂, same locality and date as holotype, Mei-cai Wei (SCAU).

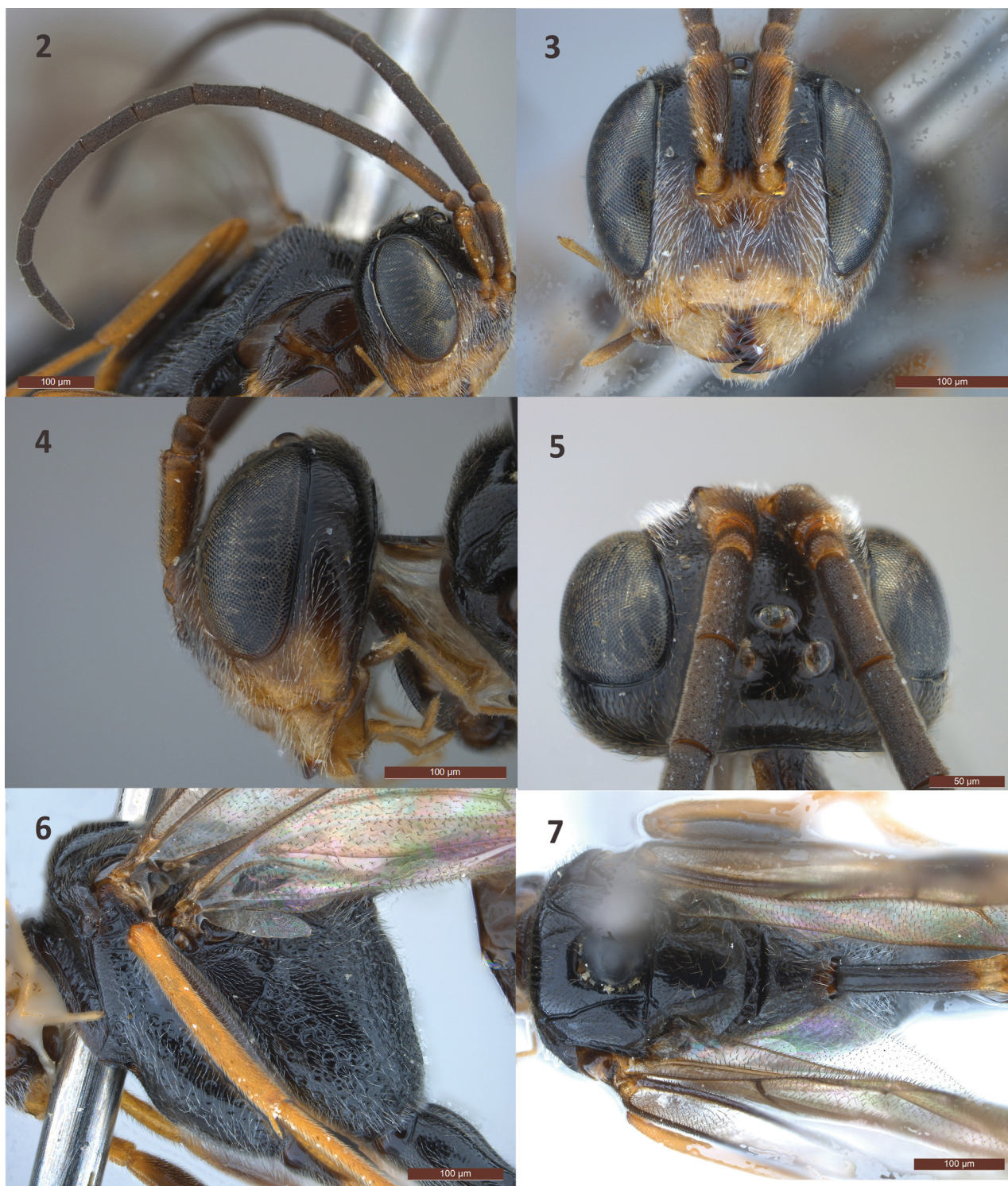
Diagnosis. *Zeuxevania orientalis* Li & Xu, **sp. nov.** can be separated from other *Zeuxevania* species by the following characters: head black, with face and lower part of gena yellowish-brown to brown; mesosoma black; petiole mostly black, with apex yellowish-brown; flagellomere 1 about as long as flagellomere 2; pronotum lateral angles rounded, enlarged and exceeding to tegulae laterally; mesoscutellum moderately depressed laterally and slightly angulate postero-laterally; fore wing membrane wholly hyaline; hind tibia and first tarsomere without small spine; petiole laterally $3.2 \times$ as long as propodeum dorsally.

Description. Holotype. *Male*. Body length 4.4 mm; fore wing length 5.3 mm.



FIGURE 1. *Zeuxevania orientalis* **sp. nov.** ♂, holotype, habitus, lateral view.

Head. Head fully pubescent and finely and sparsely punctate; hemispherical in lateral view and circular in frontal view. Toruli slightly ventral to vertical midline of eye. Antennal sockets clearly separated. Face slightly convex; lower face with a small tubercle medially. Apex of clypeus moderately protruded medially. Malar carina absent. Malar space length $1.2 \times$ as long as basal width of mandible. Antennal scape $2.8 \times$ as long as wide; pedicel as long as wide; antennal segments in following proportions: 52:15:59:60:58:55:47:47:44:40:38:36:46. Mandible with three teeth, apical tooth longer and sharper than other two. Maxillary and labial palpi without swelling, with 5 and 4 segments, respectively. Eye elliptical, $0.5 \times$ as wide as high at widest point. OOL:POL:OD=3:3:2. Occipital carina complete.



FIGURES 2–7. *Zeuxevania orientalis* sp. nov. ♂, holotype. 2. Antenna; 3. Head, frontal view; 4. Head, lateral view; 5. Head, dorsal view; 6. Mesosoma, lateral view; 7. Mesosoma and petiole, dorsal view.

Mesosoma. Mesosoma fully pubescent, $1.4 \times$ as long as high in lateral view. Pronotum lateral angles rounded, enlarged and exceeding to tegulae laterally. Mesoscutum finely and sparsely punctate; $0.7 \times$ as long as wide; moderately convex medially, slightly depressed antero-laterally and slightly angulate postero-laterally. Notauli complete, not straight and not collided posteriorly. Parapsidal furrows present posteriorly. Mesoscutellum finely and sparsely punctate; $0.9 \times$ as long as mesoscutum; moderately convex medially, moderately depressed laterally and slightly angulate postero-laterally. Metanotum irregularly foveolate. Propleuron, mesopleuron and metapleuron weakly reticulate-rugose. Propodeum reticulate-rugose. Metasternal processes divergent. Distance between mid and hind coxae distinctly shorter than distance between fore and mid coxae (4:9). Hind leg $4.8 \times$ as long as mesosoma height. Hind femur $0.9 \times$ as long as hind tibia; hind tibia and first tarsomere without small spine; hind tibia $0.9 \times$ as long as hind tarsus; hind inner tibial spur $1.8 \times$ as long as outer spur, $0.7 \times$ as long as first tarsomere of hind tarsus; first tarsomere of hind tarsus $0.7 \times$ as long as hind tarsomeres 2–5 combined; tarsal claw bidentate. Fore wing with 6 closed cells; vein 1RS absent, fusing basal and 1st submarginal cells; vein 2cu-a, 3RS, and 4RS distinctly present; 2Mb+3M spectral reaching to outer margin. Hind wing with distinct vein M+CU, and with eight hamuli.

Metasoma. Petiole fully pubescent, finely and sparsely punctate dorsally, smooth ventrally; about as wide as high; $9.1 \times$ as long as wide; laterally $3.2 \times$ as long as propodeum dorsally. Metasoma fully pubescent and finely punctate; elliptical in lateral view.



FIGURES 8–10. *Zeuxevania orientalis* sp. nov. ♂, holotype. 8. Hind legs; 9. Metasoma, lateral view; 10. Wings.

Colouration. Head black, with face and lower part of gena yellowish-brown to brown. Mandible yellowish-brown, with teeth blackish-brown. Maxillary and labial palpi yellowish-brown. Antenna blackish-brown, with scape and first flagellomere brown ventrally. Mesosoma black. Fore leg brown, with coxa and femur partly blackish-brown. Mid leg

brown, with coxa black and femur blackish-brown. Hind leg black, with anterior one third of tibia brown, spurs and tarsus yellowish-brown. Petiole mostly black, with apex yellowish-brown. Metasoma black. Wing membrane hyaline; vein blackish-brown.

Female. Unknown.

Variation. Paratype: body length 5.0 mm; fore wing length 5.6 mm; hind wing with nine hamuli.

Biology. Unknown.

Distribution. China (Yunnan).

Remarks. The new species similar to *Z. variabilis* Benoit, but it can be distinguished from the latter by: body mostly black (mostly blackish-brown in *Z. variabilis*); antenna blackish-brown, with scape and first flagellomere brown ventrally (antenna blackish-brown, with flagellomeres 1–4 pale yellow to yellowish-brown in *Z. variabilis*); flagellomere 1 about as long as flagellomere 2 (about $2.0 \times$ in *Z. variabilis*); and petiole laterally $3.2 \times$ as long as propodeum dorsally (2.5 in *Z. variabilis*).

Etymology. The specific name “*orientalis*” refers to first record of this genus in Oriental region.

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